

VAX/VMS Error Log Utility Reference Manual

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VAX/VMS Error Log Utility Reference Manual

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The Error Log Utility selectively reports the contents of an error log file. The error log entries are processed by selection for the interval and device type specified. Several forms of output can be directed to a terminal for display or to a disk or magnetic tape.

This manual contains updated information. Technical additions or changes are indicated by change bars (■) for additions, and bullets (●) for deletions.

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Preface

Intended Audience

This document is intended for users who need to transfer data between foreign volumes and VAX/VMS volumes.

Structure of This Document

This document is composed of three major sections.

The Format Section is an overview of the Exchange Utility (EXCHANGE) and is intended as a quick reference guide. The format summary contains the DCL command that invokes EXCHANGE, listing all command and positional qualifiers and parameters. The usage summary describes how to invoke and exit from EXCHANGE, how to direct output, and any restrictions you should be aware of. The command summary lists all commands and qualifiers that can be used within the Exchange Utility.

The Description Section explains how to use EXCHANGE.

The Command Section describes each EXCHANGE command and the qualifiers that the command supports. The commands appear in alphabetical order.

Associated Documents

The *Guide to VAX/VMS Disk and Magnetic Tape Operations* provides task-oriented instructions for performing EXCHANGE operations on private volumes.

The *Guide to VAX/VMS System Management and Daily Operations* includes system management tasks that use the Exchange Utility.

The *Guide to VAXclusters* includes examples that show the use of EXCHANGE in a VAXcluster environment.

Conventions Used in This Document

Convention	Meaning
<code>RET</code>	A symbol with a one- to three-character abbreviation indicates that you press a key on the terminal, for example, <code>RET</code> .
<code>CTRL/x</code>	The phrase CTRL/x indicates that you must press the key labeled CTRL while you simultaneously press another key, for example, CTRL/C, CTRL/Y, CTRL/O. In examples, this control key sequence is shown as ^x, for example, ^C, ^Y, ^O, because that is how the system echoes control key sequences.
\$ SHOW TIME 05-JUN-1982 11:55:22	Command examples show all output lines or prompting characters that the system prints or displays in black letters. All user-entered commands are shown in red letters.
.	Vertical series of periods, or ellipsis, mean either that not all the data that the system would display in response to the particular command is shown or that not all the data a user would enter is shown. Vertical ellipsis in coding examples indicate that lines of code not pertinent to the example are omitted.
file-spec, . . .	Horizontal ellipsis indicates that additional parameters, values, or information can be entered.
[logical-name]	Square brackets indicate that the enclosed item is optional. (Square brackets are not, however, optional in the syntax of a directory name in a file specification or in the syntax of a substring specification in an assignment statement.)
quotation marks apostrophes	The term quotation marks is used to refer to double quotation marks ("). The term apostrophe (') is used to refer to a single quotation mark.

Summary of Technical Changes

This manual documents the Error Log Utility in Version 4.2 of VAX/VMS. This utility replaces the SYE Utility (SYE), which is no longer supported.

ERROR LOG

The Error Log Utility selectively reports the contents of an error log file.

FORMAT

ANALYZE/ERROR_LOG [/qualifier(s)] [file-spec][,...]

Command Qualifiers

/BEFORE[=date-time]
 /[NO]BINARY[=file-spec]
 /BRIEF
 /ENTRY[=(start:dec-value[,end:dec-value])]
 /EXCLUDE=(device or entry-type[,...])
 /[NO]FULL
 /INCLUDE=(device or entry-type[,...])
 /[NO]LOG
 /OUTPUT[=file-spec]
 /REGISTER_DUMP
 /REJECTED[=file-spec]
 /SID_REGISTER[=%Xhex-value]
 /SINCE[=date-time]
 /STATISTICS
 /SUMMARY[=summary-type[,...]]

Defaults

See text.
 /NOBINARY
 None.
 See text.
 None.
 /FULL
 None.
 /NOLOG
 /OUTPUT=SYS\$OUTPUT
 None.
 None.
 None.
 See text.
 None.
 None.

Command Parameters

/qualifier(s)

The function(s) to be performed by the ANALYZE/ERROR_LOG command.
 file-spec[,...]

Specifies one or more files that contain binary error information to be interpreted for the error log report. You can include wildcard characters in the file-spec. If you omit the file specification, the default file is SYS\$ERRORLOG:ERRLOG.SYS (see the *Guide to VAX/VMS System Management and Daily Operations* for information on maintaining this file).

See the *VAX/VMS DCL Dictionary* for details on specifying file specifications.

usage summary

Invoking

You invoke the Error Log Utility by entering the following DCL command:

ANALYZE/ERROR_LOG [/qualifier(s)] [file-spec][,...]

The Error Log Utility does not prompt.

Exiting

You exit the Error Log Utility by entering CTRL/C or when end-of-file (EOF) is detected.

Directing Output

You direct output of the Error Log Utility with the /OUTPUT, /BINARY, and /REJECTED qualifiers.

ERROR LOG

Description

Privileges/Restrictions

You must have SYSPRV privilege to run the Error Log Utility. However, only read access is required to access the file ERRORLOG.SYS. (It is not necessary to rename the file ERRORLOG.SYS to ERRORLOG.OLD before using the Error Log Utility.)

Do not use the /BINARY qualifier with the /FULL, /BRIEF, /OUTPUT, /REGISTER_DUMP, or /SUMMARY qualifiers.

DESCRIPTION

The Error Log Utility is a system management tool that selectively reports the contents of one or more error log files.

The VAX/VMS system automatically writes messages to the latest version of an error log file named SYS\$ERRORLOG:ERRLOG.SYS as the following events occur:

- Errors—Device errors, device timeouts, machine checks, bus errors, memory errors (hard or soft error correcting code (ECC) errors), asynchronous write errors, undefined interrupts, and bugchecks.
- Volume changes—Volume mounts and dismounts
- System events—Cold start-ups, warm start-ups, system failure (crash) start-ups, messages from the Send Message to Error Logger (\$SENDERR) system service, or time stamps.

The Error Log Utility processes error log entries by selection to produce six forms of optional output:

- A full report of selected entries. This is the default.
- A brief report of selected entries.
- A summary report of selected entries.
- A register dump report of selected device entries.
- A binary copy of selected entries.
- A binary copy of rejected entries.

These forms of output can be directed to a terminal for display or to a disk or magnetic tape file with the /OUTPUT qualifier. By default, the output is directed to the SYS\$OUTPUT device. The report formats can be changed by specifying /FULL, /BRIEF, /SUMMARY, /REGISTER_DUMP, /REJECTED, or /BINARY.

Error log entries are processed by selection for the interval specified by the /SINCE, /BEFORE, or /ENTRY qualifiers. The selection qualifiers /INCLUDE and /EXCLUDE form a filter which is used to determine which error log entries to select or reject.

ERROR LOG

Description

All Error Log Utility reports are 72 columns wide, so that they can be displayed at the terminal. Note that these reports are primarily intended to assist DIGITAL Field Service personnel. However, in some cases, they can assist in system management by identifying recurrent failures that indicate outside attention is required.

The Error Log Utility will issue error messages for inconsistent error log entries. The *VAX/VMS System Messages and Recovery Procedures Reference Manual* lists these messages and provides explanations and suggested user actions.

The Example Section shows the format of a typical error log report.

ERROR LOG

Command Qualifiers

COMMAND QUALIFIERS

The qualifiers for the ANALYZE/ERROR_LOG command are described in this section.

/BEFORE

Specifies that only those entries dated earlier than the stated date-time be selected for the error report.

FORMAT

/BEFORE [=date-time]

qualifier value

date-time

Limits the error report to those entries dated earlier than the specified time.

DESCRIPTION

You can specify an absolute time, a delta time, or a combination of absolute and delta times. See the *VAX/VMS DCL Dictionary* for details on specifying times.

If you omit the /BEFORE qualifier, or specify /BEFORE without a date or time, all entries are processed.

EXAMPLE

♦ **ANALYZE/ERROR_LOG/BEFORE=12-FEB-1985-10:00 ERRLOG.OLD;5**

The error log report generated for ERRLOG.OLD;5 will contain entries that were logged before 10:00 on the 12th of February 1985.

ERROR LOG

/BINARY

/BINARY

Used to control whether the binary error log records are converted to ASCII text or copied to the specified output file.

FORMAT	/BINARY [=file-spec] /NOBINARY
---------------	---

qualifier value	file-spec The output file selected to contain image copies of the input records.
------------------------	--

DESCRIPTION	<p>The /BINARY qualifier creates a binary file that contains copies of the original binary error log entry—if selected because of the interval (/SINCE, /BEFORE, and /ENTRY qualifiers) and filter (/INCLUDE and /EXCLUDE qualifiers) specified. If no interval or filter is specified, then all error log entries are copied.</p> <p>If you specify /BINARY=file-spec, the selected output file will contain image copies of the binary input records (the records will not be translated to ASCII). If you omit the device or directory specification, the current device and the default directory are used. If you omit the filename, then the file name of the input file is used. If you omit the file type, the file type is DAT.</p> <p>Do not use /BINARY with the /FULL, /BRIEF, /OUTPUT, /REGISTER_DUMP, or /SUMMARY qualifiers. These qualifiers generate an ASCII report; /BINARY generates a binary file.</p>
--------------------	---

EXAMPLE

⚡ ANALYZE/ERROR_LOG/INCLUDE=DBA1/BINARY=DBA1_ERR.DAT ERRLOG.OLD;5

The output file DBA1_ERR.DAT will contain image copies of the entries that apply to DBA1.

ERROR LOG

/BRIEF

/BRIEF

Generates a brief report, which supplies minimal information for the error log entry.

FORMAT /BRIEF

DESCRIPTION Do not use /BRIEF with the /BINARY qualifier.

EXAMPLE

* **ANALYZE/ERROR_LOG/BRIEF ERRLOG.OLD;97**

The error log report generated from ERRLOG.OLD;97 will contain only minimal information.

ERROR LOG

/ENTRY

/ENTRY

Generates an error log report that covers the specified entry range or starts at the specified entry number.

FORMAT

/ENTRY *[=(start:decimal-value[,end:decimal-value])]*

qualifier value

(start:decimal-value[,end:decimal-value])

The range of entries to be included in the error log report.

DESCRIPTION

If you specify /ENTRY without the entry range or omit the qualifier, the entry range defaults to START:1,END:end-of-file.

EXAMPLE

⚡ *ANALYZE/ERROR_LOG/ENTRY=(START:1,END:18) ERRLOG.SYS*

The entry range for the error log report generated from file ERRLOG.SYS is limited to entry numbers 1 through 18.

/EXCLUDE

Excludes errors generated by the specified device(s) and/or error log entry type(s) from the error log report.

FORMAT

/EXCLUDE =(device-or-entry-type[,...])

qualifier value

device-or-entry-type[,...]

The device(s) and/or entry type(s) to be excluded from the error log report.

DESCRIPTION

You can specify one or more devices by device class or name. The following keywords and name constructs are valid for specifying devices.

Device Class Keywords

BUSES
DISKS
REALTIME
SYNC_COMMUNICATIONS
TAPES

Device Name Constructs

DB	group of devices
DBA 1	specific device/unit number
(DBA 1,HSC1\$DUA 1,DYA 0)	list of devices
(DB,DR,XF)	list of device groups

You can specify one or more of the following keywords that identify entry types:

ATTENTIONS	Exclude device attention entries from the output report.
BUGCHECKS	Exclude all types of bugcheck entries from the report.

ERROR LOG

/EXCLUDE

CONTROL_ENTRIES

Exclude control entries from the report. Control entries include the following entry types:

- System power-fail restarts
- Time stamps
- System start ups
- \$SNDERR messages (system service to send messages to error log)
- Operator messages
- Network messages
- ERRLOG.SYS created

CPU_ENTRIES

Exclude CPU-related entries from the report. CPU entries include the following entry types:

- SBI alerts/faults
- Undefined interrupts
- MBA/UBA adapter errors
- Asynchronous write errors
- UBA errors

DEVICE_ERRORS

Exclude device error entries from the report.

ENVIRONMENTAL_ENTRIES

Exclude environmental entries from the report.

MACHINE_CHECKS

Exclude machine check entries from the report.

MEMORY

Exclude memory errors from the report.

SNAPSHOT_ENTRIES

Exclude snapshot entries from the report.

TIMEOUTS

Exclude device timeout entries from the report.

UNKNOWN_ENTRIES

Exclude any entry that had either an unknown entry type or an unknown device type/class.

UNSOLICITED_MSCP

Exclude unsolicited MSCP entries from the output report.

VOLUME_CHANGES

Exclude volume mount and dismount entries from the report.

The UNKNOWN_ENTRIES keyword should be used to obtain a report that contains the contents of the device registers logged by unsupported devices.

Any known information for the entry is translated; the remaining information is output in hexadecimal longwords.

If you specify a device class keyword or a device name construct with both the /INCLUDE and /EXCLUDE qualifiers, the /INCLUDE qualifier takes precedence.

EXAMPLES

1 * **ANALYZE/ERROR_LOG/EXCLUDE=MTA0**

The error log entries for the device MTA0 are excluded from the error log report for the file ERRLOG.SYS.

2 * **ANALYZE/ERROR_LOG/EXCLUDE=(MTA0,DRA5) ERRLOG.OLD**

The devices MTA0 and DRA5 are excluded from the error log report for the file ERRLOG.OLD.

3 * **ANALYZE/ERROR_LOG/EXCLUDE=(DISKS,BUGCHECKS)**

All disk devices and all bugcheck entries are excluded from the error log report for the file ERRLOG.SYS.

4 * **ANALYZE/ERROR_LOG/INCLUDE=MTA0/EXCLUDE=TAPES**

The device MTA0 is included in the error log report for the file ERRLOG.SYS. All other magnetic tape devices are excluded from the report.

5 * **ANALYZE/ERROR_LOG/EXCLUDE=(DISK,VOLUME_CHANGES)**

Entries for disk volume information are excluded from the error log report for the file ERRLOG.SYS.

6 * **ANALYZE/ERROR_LOG/EXCLUDE=(DISK,VOLUME_CHANGES,DEVICE_ERROR)**

Entries for volume and device error information on disks are excluded from the error log report for the file ERRLOG.SYS.

7 * **ANALYZE/ERROR_LOG/EXCLUDE=(DISK,VOLUME_CHANGES,DEVICE_ERROR,BUGCHECK)**

Entries for volume and device error information on disks, and bugcheck errors are excluded from the error log report for the file ERRLOG.SYS.

ERROR LOG

/FULL

/FULL

Generates a full report, which provides all possible information available for an error log entry. This is the default report format.

FORMAT **/[NO]FULL**

DESCRIPTION Do not use /FULL with the /BINARY qualifier.

EXAMPLES

1 \$ **ANALYZE/ERROR_LOG/FULL ERRLOG.OLD;72**

This command produces a full error log report.

2 \$ **ANALYZE/ERROR_LOG ERLOG.OLD;72**

This command produces a full report. The default report type is /FULL; it is not necessary to specify it in the command line.

/INCLUDE

Includes errors generated by the specified device(s) and/or error log entry type(s) in the error log report.

FORMAT

/INCLUDE=(*device-or-entry-type*[,...])

qualifier value

device-or-entry-type[,...]

The device(s) and/or entry type(s) to be included in the error log report.

DESCRIPTION

You can specify one or more devices by device class or name. The following keywords and name constructs are valid for specifying devices.

Device Class Keywords

BUSES
DISKS
REALTIME
SYNC_COMMUNICATIONS
TAPES

Device Name Constructs

DB	group of devices
DBA1	specific device/unit number
(DBA1,HSC1\$DUA1,DYAO)	list of devices
(DB,DR,XF)	list of device groups

You can specify one or more of the following keywords that identify entry types:

ATTENTIONS	Include device attention entries in the output report.
BUGCHECKS	Include all types of bugcheck errors in the report.
CONTROL_ENTRIES	Include control entries in the report. Control entries include the following entry types: <ul style="list-style-type: none"> • System power-fail restarts • Time stamps • System start ups • \$SENDERR messages (system service to send messages to error log) • Operator messages • Network messages • ERRLOG.SYS created

ERROR LOG

/INCLUDE

CPU_ENTRIES	Include CPU-related entries in the report. CPU entries include the following entry types: <ul style="list-style-type: none">• SBI alerts/faults• Undefined interrupts• MBA/UBA adapter errors• Asynchronous write errors• UBA errors
DEVICE_ERRORS	Include device errors in the report.
ENVIRONMENTAL_ENTRIES	Include environmental entries in the report.
MACHINE_CHECKS	Include machine check errors in the report.
SNAPSHOT_ENTRIES	Include snapshot entries in the report.
MEMORY	Include memory errors in the report.
TIMEOUTS	Include device timeout errors in the report.
UNKNOWN_ENTRIES	Include any entry that had either an unknown entry type or an unknown device type/class.
UNSOLICITED_MSCP	Include unsolicited MSCP entries in the output report.
VOLUME_CHANGES	Include volume mount and dismount entries in the report.

The UNKNOWN_ENTRIES keyword should be used to obtain a report that contains the contents of the device registers logged by unsupported devices.

Any known information for the entry is translated; the remaining information is output in hexadecimal longwords.

If you specify a device class keyword or a device name construct with both the /INCLUDE and /EXCLUDE qualifiers, the /INCLUDE qualifier takes precedence.

EXAMPLES

1 \$ ANALYZE/ERROR_LOG/INCLUDE=MTA0

The report will consist of only error log entries for the device MTA0, which are in the default error log file ERRLOG.SYS.

2 \$ ANALYZE/ERROR_LOG/INCLUDE=(MTA0,VOL)

The report will consist only of error log entries and volume mounts and dismounts for the device MTA0, which are in the default error log file ERRLOG.SYS.

3 \$ ANALYZE/ERROR_LOG/INCLUDE=(DISK,VOLUME_CHANGES)

The report will consist only of error log entries for disk volume information, which are in the default error log file ERRLOG.SYS.

ERROR LOG /INCLUDE

4 \$ ANALYZE/ERROR_LOG/INCLUDE=(DISK,VOLUME_CHANGES,DEVICE_ERROR)

The report will consist only of error log entries for volume and device error information on disks, which are in the default error log file ERRLOG.SYS.

5 \$ ANALYZE/ERROR_LOG/INCLUDE=(DISK,VOLUME_CHANGES,DEVICE_ERROR,BUGCHECK)

The report will consist only of error log entries for volume and device error information on disks, and bugcheck errors. These entries are in the default error log file ERRLOG.SYS.

ERROR LOG

/LOG

/LOG

Controls whether informational messages that specify the number of entries selected and rejected for each input file are sent to SYS\$OUTPUT. By default, these messages are not displayed.

FORMAT

/[NO]LOG

EXAMPLE

⌘ ANALYZE/ERROR_LOG/LOG ERRLOG.OLD;5

Informational messages generated about ERRLOG.OLD;5 are sent to SYS\$OUTPUT.

/OUTPUT

Specifies the output file for the error log report.

FORMAT **/OUTPUT** [=file-spec]

qualifier value **file-spec**

The output file selected for the error log report. See the *VAX/VMS DCL Dictionary* for details on specifying file specifications.

DESCRIPTION If you omit the /OUTPUT qualifier, output is directed to SYS\$OUTPUT. If you specify /OUTPUT=file-spec, the selected output file will contain the error log report. If you omit the device or directory specification, the current device and the default directory are used. If you omit the filename, the the filename of the input file is used. If you omit the file type, the file type is LIS.

Do not use /OUTPUT with the /BINARY qualifier.

EXAMPLE

⌘ ANALYZE/ERROR_LOG/OUTPUT=ERROR_LOG.LIS ERRLOG.OLD;72

The output file ERROR_LOG.LIS will contain entries generated from ERRLOG.OLD;72.

ERROR LOG

/REGISTER_DUMP

/REGISTER_DUMP

Used in conjunction with the /INCLUDE qualifier to generate, in a hexadecimal longword format, a report that consists of device register information.

FORMAT /REGISTER_DUMP

DESCRIPTION The /REGISTER_DUMP qualifier can be used to obtain a report that lists the hexadecimal contents of the device registers for the device specified by the /INCLUDE qualifier. The /INCLUDE qualifier must be used with the /REGISTER_DUMP qualifier.

/REGISTER_DUMP only reports register contents for memory, device error, and device timeout entries. There is no translation of any of the device register information.

Do not use /REGISTER_DUMP with the /BINARY qualifier.

EXAMPLE

⚡ ANALYZE/ERROR_LOG/INCLUDE=DB/REGISTER_DUMP ERRLOG.OLD;72

The output will be in the format of a REGISTER_DUMP report containing only entries that apply to the DB device.

/REJECTED

Allows the user to specify the name of a file that will contain binary records for rejected entries.

FORMAT /REJECTED [=file-spec]

qualifier value *file-spec*

The name of the file that is to contain the rejected entries.

DESCRIPTION The /REJECTED qualifier creates a binary file that contains copies of the original binary error log entry. If an error log entry is rejected because of the filter (/INCLUDE and /EXCLUDE qualifiers) or interval (/SINCE, /BEFORE, and /ENTRY qualifiers) specified and the /REJECTED qualifier was also specified, the entry is written to the specified file.

Rejected entries are those entries that will not be translated because they fall into one of the following categories:

- All entries specified with the /EXCLUDE qualifier
- All entries not specified with the /INCLUDE qualifier
- Any entry that does not occur within the period specified by the /SINCE and /BEFORE qualifiers
- Any entry that is not in the range of entries specified by the /ENTRY qualifier

If you specify /REJECTED=file-spec, the output file will contain image copies of the rejected records. If you omit the device or directory specification, the current device and default directory are used. If you omit the file name, then the file name of the input file is used. If you omit the file type, the file type is REJ.

EXAMPLE

⚡ ANALYZE/ERROR_LOG/INCLUDE=MTAO/REJECTED=REAL_ERRS.DAT ERRLOG.OLD;5

The output file REAL_ERRS.DAT will contain image copies of all entries from ERRLOG.OLD;5 with the exception of those entries that apply to the MTA0 device.

ERROR LOG

/SID_REGISTER

/SID_REGISTER

Generates a report that consists of error log entries that occurred on the specified CPU.

FORMAT

/SID_REGISTER [= %Xhexadecimal-value]

qualifier value

%Xhexadecimal-value

The value obtained from the system ID register. You use the \$GETSYI system service to obtain this value, which is unique to each system. The *VAX/VMS System Services Reference Manual* describes the \$GETSYI system service.

EXAMPLE

* ANALYZE/ERROR_LOG/SID_REGISTER=%X02006148 ERRLOG.OLD;72

The output will consist of only those entries that were logged for the system with the system ID of 02006148 (hexadecimal).

/SINCE

Specifies that only those entries dated later than the stated date-time be selected for the report.

FORMAT

/SINCE [=date-time]

qualifier value

date-time

Limits the error report to those entries dated later than the specified time.

DESCRIPTION

Only absolute date-time specifications are valid. See the *VAX/VMS DCL Dictionary* for details on specifying times.

If you omit the /SINCE qualifier, all entries are processed. If you specify /SINCE without a date-time, the default is TODAY.

EXAMPLE

⌘ **ANALYZE/ERROR_LOG/SINCE=22-MAR-1985-15:00 ERRLOG.OLD;56**

The error log report generated from ERRLOG.OLD;56 will contain entries that have been logged since 15:00 on March 22, 1985.

ERROR LOG

/STATISTICS

/STATISTICS

Generates run-time statistical information.

FORMAT /STATISTICS

DESCRIPTION The /STATISTICS qualifier can be used to generate a report that consists of the page faults, buffered I/O, direct I/O, and CPU time used in the execution of the ANALYZE/ERROR_LOG command.

EXAMPLE

* ANALYZE/ERROR_LOG/STATISTICS ERRLOG.OLD;4

The output generated by this command consists of a full report of all entries in ERRLOG.OLD;4 and the run-time statistics for the execution of the command.

/SUMMARY

Generates an error log report that consists of a statistical summary.

FORMAT

/SUMMARY [=summary-type[,...]]
/NOSUMMARY

qualifier parameter

summary-type

The keyword for the selected type of summary.

DESCRIPTION

You may select the type of summary by specifying one or more of the following keywords:

Keyword	Meaning
DEVICE	Include the Device Summary section in the report.
ENTRY	Include the Summary of Entries Logged section in the report.
HISTOGRAM	Include the Processed Entries Hour of Day Histogram in the report.
MEMORY	Include the Summary of Memory Errors section in the report.
VOLUME	Include the Volume Label section in the report.

Note: If you specify **/SUMMARY** without a *summary-type*, the report contains all the summary types listed above. If only a summary report is desired, the command line must specify both the **/NOFULL** qualifier and the **/SUMMARY** qualifier.

No attempt should be made to correlate the error counts reported by the DCL command **SHOW ERROR** and the **/SUMMARY** qualifier. The discrepancy in these numbers could be due to any number of system events. For example, if an error occurs on a disk, the error is included in the summary report and the error count for the disk is incremented. The system may then attempt to retry the operation and, if another error occurs, only the error count for the disk is incremented; this second error is not included in the summary report.

Do not use the **/BINARY** qualifier with **/SUMMARY**.

EXAMPLES

1 \$ **ANALYZE/ERROR_LOG/SUMMARY ERRLOG.OLD;5**

The output generated by this command will include a full report and a summary report of all entries in **ERRLOG.OLD;5**.

2 \$ **ANALYZE/ERROR_LOG/NOFULL/SUMMARY ERRLOG.OLD;5**

The output generated by this command will consist of only a summary report of all entries in **ERRLOG.OLD;5**.

ERROR LOG

/SUMMARY

3 \$ ANALYZE/ERROR_LOG/SUMMARY=(ENTRY,DEVICE)

The output generated by this command will include only the Entry and Device sections of the summary report from the default input file ERRLOG.SYS.

4 \$ ANALYZE/ERROR_LOG/INCLUDE=DBA4/NOFULL/SUMMARY ERRLOG.OLD;5

The output generated by this command will include only the summary report. The contents of the report will reflect only the device error, device timeout, and device attention entries that apply to the DBA4 device.

An error log report entry contains two sections: identification and device-dependent data. The identification section consists of the first four lines of the report. It is generated for all reports. The device-dependent data section, which follows the identification section, contains information on the selected error log entries.

The first line of the device-dependent data section may identify the device or subsystem on which the error occurred. The remainder of this section may consist of hardware information, which shows the contents of the device registers, and software information, which shows the contents of the I/O database at the time of the error.

The following output report is an example of the type generated by device errors, device attention, and device timeouts from a disk on the system.

ERROR LOG

Examples

```
V A X / V M S      SYSTEM ERROR REPORT      COMPILED 6-MAR-85 14:39
                                           PAGE 1.
***** ENTRY      5. *****
ERROR SEQUENCE 42.      LOGGED ON SID 01380101
DEVICE ERROR,  5-MAR-85 14:42:16.93
                  KA780 REV# 7. SERIAL# 257.
MASSBUS SUB-SYSTEM, UNIT _DBB1:
  RH780 CSR      00000020      ADAPTER IS MBA
  RH780 CR       00000004      INTERRUPT ENABLE
  RH780 SR       00003080      "MASSBUS" EXCEPTION
                                DATA TRANSFER ABORTED
                                DATA TRANSFER COMPLETED
  RH780 VAR      0000003C      60. BYTE, PAGE OFFSET
                                MAPPING REGISTER #0. SELECTED
  RH780 BCR      FE00FE18      "SBI" BYTE COUNT, 488.
                                "MASSBUS" BYTE COUNT, 512.
  RH780 MPR #0.  800034F1      VALID
                                TRANSFER PAGE, 6776.5. K
  RPCS          00000830      WRITE DATA
                                DRIVE AVAILABLE
  RPDS          000059C0      VOLUME VALID
                                DRIVE READY
                                DRIVE PRESENT
                                WRITE PROTECTED
                                MEDIUM ON-LINE
                                COMPOSITE ERROR
  RPER1         00000800      WRITE LOCK ERROR
  RPMR          00000100
  RPAS          00000000
  RPDA          00000105      SECTOR = 5.
                                TRACK = 1.
  RPD1         00002012      DRIVE TYPE RPO6
                                MOVING HEAD
  RPLA          00000110      SECOND QUARTER
                                SECTOR COUNTER = 4.
  RPER2         00000000
  RPDF          00009800      ECC INHIBIT
                                16-BIT FORMAT
                                SIGN CHANGE
  RPDC          00000001      DESIRED CYLINDER = 1.
  RPCC          00000001      CURRENT CYLINDER = 1.
```

ERROR LOG

Examples

```

V A X / V M S      SYSTEM ERROR REPORT      COMPILED 6-MAR-85 14:39
                                           PAGE 2.

RPSN                00000247
RPER3               00000000
RPEC1               00000000
RPEC2               00000000
UCB$B_ERTCNT        08
UCB$B_ERTMAX        08
UCB$L_OWNUIC        00000000
UCB$L_CHAR          1CC54008

                        8. RETRIES REMAINING
                        8. RETRIES ALLOWABLE
                        OWNER UIC [000,000]
                        DIRECTORY STRUCTURED
                        FILE ORIENTED
                        SHARABLE
                        AVAILABLE
                        ERROR LOGGING
                        ALLOCATED
                        CAPABLE OF INPUT
                        CAPABLE OF OUTPUT
                        RANDOM ACCESS

UCB$W_STS           0910
                        ONLINE
                        BUSY
                        SOFTWARE VALID

UCB$L_OPCNT         0000000E
UCB$W_ERRCNT        0001
UCB$L_MEDIA         00010104
                        14. QIO'S THIS UNIT
                        1. ERRORS THIS UNIT
                        FUNCTION START ADDRESS,
                        - CYLINDER #1.,
                        - TRACK #1.,
                        - SECTOR #4.

IRP$W_FUNC          000B
IRP$W_BCNT          0200
IRP$W_BOFF          001C
IRP$L_PID           0003003D
IRP$Q_IOSB          0000025C
                        WRITE PHYSICAL BLOCK
                        TRANSFER SIZE 512. BYTE(S)
                        28. BYTE PAGE OFFSET
                        REQUESTOR "PID"
                        00000000
                        IOSB, 0. BYTE(S) TRANSFERRED

```

Time Stamp, Volume Mount, and Volume Dismount Entries Examples

The following are examples of a system time stamp entry and volume mount and dismount entries. The time stamp entry contains only an identification section, which is logged by the operating system at 10 minute intervals. If no other error log entries are made during the 10 minute period, the previous time stamp is overwritten with the current time stamp at the end of the period.

The mount volume entry contains an identification section followed by a device-dependent data section. The device-dependent data section shows the name of the device the volume is mounted on, the volume label (if the volume has a label), and the I/O operations and error counts for the device.

The dismount volume entry is almost identical to the mount volume entry. In addition to the data provided in the volume mount entry, the I/O operations and error counts for the device the volume was mounted on are also reported.

ERROR LOG

Examples

```
***** ENTRY          93. *****
ERROR SEQUENCE 421.          LOGGED ON SID 01380101
TIME STAMP, 4-MAR-85 11:10:08.79
      KA780 REV# 7. SERIAL# 7.
***** ENTRY          94. *****
ERROR SEQUENCE 422.          LOGGED ON SID 01380101
MOUNT VOLUME, 4-MAR-85 11:14:12.51
      KA780 REV# 7. SERIAL# 7.
      UNIT _DMA0:, VOLUME LABEL "TEST"
      656. QIO OPERATIONS THIS UNIT, 1. ERRORS THIS UNIT
***** ENTRY          95. *****
ERROR SEQUENCE 423.          LOGGED ON SID 01380101
DISMOUNT VOLUME, 4-MAR-85 11:14:41.30
      KA780 REV# 7. SERIAL# 7.
      UNIT _DMA0:, VOLUME LABEL "TEST"
      697. QIO OPERATIONS THIS UNIT, 1. ERRORS THIS UNIT
      41. QIO OPERATIONS THIS VOLUME, 0. ERRORS THIS VOLUME
```

Machine Check Entries Example

The following are examples of machine check error reports. Each report consists of three sections: the identification section, the program counter and summary code section, and an error-dependent section.

The program counter and summary code section of the report displays the contents of the program counter, the processor status longword, and the summary code. The contents of the processor status longword and the summary code are described in the text on the right side of the report.

The remainder of the report (the error-dependent section) consists of CPU-dependent information that was logged as a result of the machine check.

```
***** ENTRY          6. *****
ERROR SEQUENCE 3.          LOGGED ON SID 03003700
MACHINE CHECK, 6-MAR-1985 10:11:34.70
      KA730 REV# 0. MIC# 55.
      EXCEPTION PC      80038DC0
      ERROR PSL        01C00000
      SUMMARY CODE     00000007
      1ST PARAMETER    00166200
      INTERRUPT PRIORITY LEVEL = 00.
      PREVIOUS MODE = USER
      CURRENT MODE = EXECUTIVE
      UNCORRECTABLE ECC ERROR
      PAGE #2865. IN ERROR
***** ENTRY          60. *****
ERROR SEQUENCE 4872.          LOGGED ON SID 02006148
MACHINE CHECK, 6-MAR-1985 03:50:08.28
      KA750 REV# 72. MIC# 97.
      EXCEPTION PC      80006173
      ERROR PSL        00C80009
      C-BIT
      N-BIT
      INTERRUPT PRIORITY LEVEL = 08.
      PREVIOUS MODE = USER
      CURRENT MODE = KERNEL
```

ERROR LOG

Examples

SUMMARY CODE	00000002	TRANSLATION BUFFER OR BUS ERROR
VA LAST REF	800A079E	
PC AT ERROR	80006178	
MDR	8009F38C	
SMR	00000008	CPU MODE = KERNEL VIRTUAL READ
RLTO	00000000	
TBER	00000007	TB GO DATA ERROR TB G1 DATA ERROR TB GO TAG ERROR
CAER	00000000	
BER	00000000	
MCESR	00000004	OPERAND REFERENCE TB PARITY ERROR
***** ENTRY 84. *****		
ERROR SEQUENCE 4949. LOGGED ON SID 01388525		
MACHINE CHECK, 6-MAR-1985 15:09:11.31		
KA780 REV# 7. SERIAL# 1317.		
EXCEPTION PC	00004890	
ERROR PSL	03C00000	INTERRUPT PRIORITY LEVEL = 00. PREVIOUS MODE = USER CURRENT MODE = USER
SUMMARY CODE	00000000	CP READ TIMEOUT - OR ERROR CONFIRMATION FAULT
CES	00010084	SUPERVISOR AST PENDING ALU C31 NESTED ERROR
MICRO PC	00000200	
VA/VIBA	7FF735D4	
D REGISTER	FFFFC284	
TBERO	0000DC81	ENABLE MEMORY MANAGEMENT TB HIT GROUP 1 MICRO CODE "MCT" FIELD = 07 MICRO CODE "ADS" MICRO CODE "FS"
TBER1	00000040	LAST TB WRITE PULSE TO GROUP 1
SBITA	E00B83F5	TIMEOUT CONSOLE ADDR = 002E0FD4 PROTECTION CHECKED REFERENCE TIMEOUT REFERENCE IN USER MODE
CACHE PE REG	00004000	
SBIER	00001802	CP ERROR SBI NOT BUSY WAITING FOR READ DATA TIMEOUT CPU TIMEOUT

ERROR LOG

Examples

```
***** ENTRY 82. *****
ERROR SEQUENCE 1077. LOGGED ON SID 04FFFFFF
MACHINE CHECK 30-MAR-1985 20:55:17.41
KA86 REV# 255. SERIAL# 4095. MFG PLANT 7.

EHMSTS 40000802 VMS ERROR CODE = EBOX
MICRO TRAP VECTOR = 08 (X)
EHM ENTERED

EVMQSAV 00000004 VIRTUAL ADDRESS FOR EBOX PORT
_ REQUESTS

EBCS 00000800 ECS PARITY ERROR

EDPSR 00000000
CSLINT 04183D1F C BUS ADDRESS = 1F (X)
C BUS DATA = 3D (X)
INTERRUPT PRIORITY REQUEST = 8.
INTERNAL SOURCE
I/O ADAPTER = 0.
INTERVAL TIMER

IBESR 00004000 UOP SEL = IBOX REGISTER SELECT
UTPR <2:0> = EBOX PORT
ENABLE ETRAP

EBXWD1 00000004 TOP OF "SP STACK"
_ CONTENT IS ONE OF THE LAST
_ LONGWORDS WRITTEN TO MBOX

EBXWD2 7FF593D0 TOP OF "SP STACK" MINUS ONE
_ CONTENT IS ONE OF THE LAST
_ LONGWORDS WRITTEN TO MBOX

VASAV 7FF593F8 VIRTUAL ADDRESS FOR OP FETCH
_ PORT REQUEST ADDRESS
_ CALCULATION FOR OPERAND
_ PRE-FETCH AND RESULT DELIVERY

VIBASAV 0000E7FF VIRTUAL ADDRESS OF NEXT IBUF
_ PORT REQUEST TO FILL IBUFFER

ESASAV 0000E7F2 PC OF INSTRUCTION DURING EBOX
_ EXECUTION AND RESULT STORAGE

ISASAV 0000E7F2 PC OF INSTRUCTION WHICH VA
_ CALCULATION UNIT IS DOING ADDRESS
_ CALCULATION OR OPERAND PRE-FETCH
_ OR IS PASSING OPERAND DATA

CPC 0000E7F4 PC OF INSTRUCTION IN
_ DECODE UNIT

MSTAT1 84006004 CO TAG MISS
BLOCK HIT
ABUS ADAPTER = 0.
WORD COUNT = 0.
CYCLE TYPE = READ REGISTER
DEST CP = EBOX

MSTAT2 00004F00 DIAGNOSTIC STATUS FROM SBIA
_ RD COM/MSK <3:0> = F (X)
_ RD DAT L/S <1:0> = 0 (X)
_ ABUS BAD DATA CODE
PAMM DATA = ARRAY #0., SLOT #1.
```

ERROR LOG

Examples

```
MDECC      00066200      (* DATA NOT VALID *)
MERG       04000100      MEMORY MANAGEMENT ENABLE
CSHCTL     00000003      CACHE 0 ENABLE
                        CACHE 1 ENABLE
MEAR       0000007C      PHYSICAL ADDRESS IN PA LATCH
                        AT TIME OF ERROR = 0000007C
MEDR       0000001F      DATA WORD USED DURING ERROR
FBXERR     FFFFFFFF      (* DATA NOT VALID *)
CSES       1BD73E01      CS CODE = EBOX CONTROL STORE PARITY ERROR
                        CS SYNDROME = 3E (X)
                        CS ADDRESS = 1BD7 (X)
ERROR PC   0000E7F2
ERROR PSL  03C00004      Z-BIT
                        INTERRUPT PRIORITY LEVEL = 00.
                        PREVIOUS MODE = USER
                        CURRENT MODE = USER
IOA ES     00000000      (* DATA NOT VALID *)
```

AN/ER/INC=MACH ERR:ERRLOG.SYS_31MAR1985/ENT=S=82/OUT=DP.

Memory Error Entries Example

Memory error log entries consist of two types: fatal and nonfatal. A nonfatal memory error indicates that a single bit has failed within a memory location and that the ECC (error code correctable) was able to compensate for the error and correct the data. A fatal error indicates that multiple bits were erroneous and that the ECC could not correct the data. Both the fatal and nonfatal memory entries are similar in their format. The memory error log reports can be divided into two logical areas of information.

The first section of a memory error log report is the identification area. The second section contains memory controller-specific information. This data represents the information contained within the memory controller registers at the time of the memory error. Bit-to-text translation of the registers are performed, and then listed on the right side of the report.

```
***** ENTRY 7. *****
ERROR SEQUENCE 4.      LOGGED ON SID 03003700
MEMORY ERROR, 6-MAR-1985 10:11:34.70
KA730 REV# 0. MIC# 55.
CSR0      00166200      ERROR SYNDROME = 7F
                        CORRECTED ERROR, BIT #31.
                        ARRAY #1. IN ERROR
CSR1      18000000      MEMORY MAPPING ENABLE
                        ENABLE "CRD" REPORTING
CSR2      8100000F      MEMORY SIZE = 2048.K
                        64K RAMS PRESENT
```

ERROR LOG

Examples

```
***** ENTRY          91. *****
ERROR SEQUENCE 342.          LOGGED ON SID 0138207A
FATAL MEMORY ERROR, 4-MAR-85 08:16:45.20
KA780 REV# 7. SERIAL# 122.
CONTROLLER AT TR #5.
PRTCFNG      00000040      ADAPTER IS MULTI-PORT MEMORY
                        PORT NUMBER = 0.
PRTCR        00000003      MASTER INTERRUPT ENABLE
                        PORT INTERFACE INTERRUPT ENABLE
                        RAM COUNT 0.
PCSR         07870003      ERROR INTERRUPT ENABLE
IVDTCR       01870001      INVALIDATE CACHE DEVICE ID = 0.
                        8. ARRAY BOARD(S) PRESENT
                        MEMORY BASE ADDRESS = 6144.K
AER          16A70005      ERROR SYNDROME = 05
                        RDS ERROR
                        ARRAY #6. IN ERROR
                        ARRAY BANK #1. IN ERROR
                        ERROR LOG REQUEST
CSRO         0000C2C8      MEMORY CONTAINS VALID DATA
                        PORT #2. POWERED DOWN
                        PORT #3. POWERED DOWN
                        ERROR INTERRUPT FROM PORT #1.
                        PORT #2. OFFLINE
                        PORT #3. OFFLINE
CSR1         0000380A      PORT #0. CONNECTED TO AN SBI
                        PORT #1. CONNECTED TO AN SBI
                        PORT #2. NOT PRESENT
                        PORT #3. NOT PRESENT
                        INVALIDATION MAP PRESENT
                        PORT #0. INVALIDATION ACK RECEIVED
                        PORT #1. INVALIDATION ACK RECEIVED
MAT          0000C000
```

Nonfatal and User Bugchecks Entry Example

Shown below is an example of a fatal bugcheck. Both nonfatal and user bugcheck reports have the same format. These reports consist of three major sections: identification, bugcheck reason and process information, and system register information.

```
***** ENTRY          58. *****
ERROR SEQUENCE 1129.          LOGGED ON SID 03003700
FATAL BUGCHECK, 21-FEB-1895 11:06:53.49
KA730 REV# 0. MIC# 55.
ACPMBFAIL, ACP failure to read mailbox
PROCESS NAME      .....
PROCESS ID        00000000
ERROR PC          0000033C
ERROR PSL         00DF0008
N-BIT
INTERRUPT PRIORITY LEVEL = 31.
PREVIOUS MODE = USER
CURRENT MODE = KERNEL
```

ERROR LOG

Examples

STACK POINTERS

KSP 7FFE7D84 ESP 7FFE9E00 SSP 7FFED04E USP 7FF7F194 ISP 80140000

GENERAL REGISTERS

R0 00000001 R1 00000000 R2 7FFDFD80 R3 80000F10 R4 00000001
R5 00000001 R6 7FFED78A R7 7FFED78A R8 7FFED052 R9 7FFED25A
R10 00000000 R11 7FFE3FC0 AP 00000000 FP 7FFE7DD0 SP 7FFE7DC8

SYSTEM REGISTERS

POBR	80199000	PO PTE BASE (VIRT ADDR)
POLR	00000003	TOTAL PO PAGES
P1BR	7F9A8A00	P1 PTE BASE (VIRT ADDR)
P1LR	001FFBE5	TOTAL NON-EXISTENT P1 PAGES
SBR	001FA600	SYSTEM PTE BASE (PHY ADDR)
SLR	00001680	TOTAL PAGES 'SYSTEM' VIRT MEM
PCBB	00024874	PCB BASE (PHY ADDR)
SCBB	001F8400	SCB BASE (PHY ADDR)
ASTLVL	00000002	SUPERVISOR MODE AST PENDING
SISR	00000000	INTERRUPT REQUEST ACTIVE = 0.
ICCS	800000C1	RUN INTERRUPT ENABLE INTERRUPT ERROR
ICR	FFFFF89D	INTERVAL COUNT REGISTER
TODR	396FEB84	

Unknown Entries Example

Shown below are example reports for error log entries of unknown type. These reports consist of an identification section and a error log record section. The error log record section will contain any field that can be interpreted and the longword values for the fields that cannot be interpreted.

***** ENTRY 95. *****
ERROR SEQUENCE 2. LOGGED ON SID 03003600

"UNKNOWN DEVICE" ENTRY, 4-MAR-85 10:12:12.44
KA730 REV# 0. MIC# 54.

ERROR LOG RECORD

ERF\$L_SID	03003600	SYSTEM ID REGISTER
ERL\$W_ENTRY	0062	ERROR ENTRY TYPE
EXE\$GQ_SYSTIME	C9764980 008C2F30	64 BIT TIME WHEN ERROR LOGGED
ERL\$GL_SEQUENCE	0002	UNIQUE ERROR SEQUENCE = 2.
UCB\$W_STS	0110	DEVICE STATUS
UCB\$B_DEVCLASS	42	DEVICE CLASS = 66.

ERROR LOG

Examples

UCB\$B_DEVTYPE	42	DEVICE TYPE = 66.
UCB\$W_UNIT	0000	PHYSICAL UNIT NUMBER = 0.
UCB\$W_ERRCNT	0001	UNIT ERROR COUNT = 1.
UCB\$L_OPCNT	00000001	UNIT OPERATION COUNT = 1.
ORB\$L_OWNER	00010004	OWNER UIC = [001,004]
UCB\$L_DEVCHAR	0C440007	DEVICE CHARACTERISTICS
UCB\$B_SLAVE	00	DEVICE SLAVE CONTROLLER = 0.
DDB\$T_NAME	41515403 00000000 00000000 00000000	
		/.TQA...../
LONGWORD 1.	00000008	
LONGWORD 2.	00000007	
LONGWORD 3.	00000502	
LONGWORD 4.	04000000	
LONGWORD 5.	00010000	
LONGWORD 6.	00000000	
LONGWORD 7.	00000080	
LONGWORD 8.	00000000	
LONGWORD 9.	00000000	

***** ENTRY 161. *****
ERROR SEQUENCE 213. LOGGED ON SID 070001FF
"UNKNOWN ENTRY", 4-MAR-85 11:35:15.73
UVAX1 REV# 255. MIC# 1.

ERROR LOG RECORD

ERF\$L_SID	070001FF	SYSTEM ID REGISTER
ERL\$W_ENTRY	0008	ERROR ENTRY TYPE
EXE\$GQ_SYSTIME	89953F20 008C3E2A	64 BIT TIME WHEN ERROR LOGGED
ERL\$GL_SEQUENCE	00D5	UNIQUE ERROR SEQUENCE = 213.
LONGWORD 1.	00000001	/. . . . /
LONGWORD 2.	00410001	/..A./

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